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Hillside Place Condominiums

Building Envelope Investigation

New Britain, CT

1/25/2010

Prepared for: Hillside Place

Prepared by: Elizabeth Acly, PE,

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and John M Wathne, PE

In October of 2009 this office conducted a visual survey of the building envelopes of the main and annex structures at the Hillside Place Condominiums in New Britain, CT. The following report summarizes our findings.

Executive Summary

Much of the exterior masonry is in good condition, however all facades have areas that are in need of repair as a result of deferred maintenance. It is apparent that past attempts at sustaining the structural integrity and aesthetic appeal of these buildings were temporary in nature. A structure with a great magnitude of historic and architectural significance such as this requires substantial and timely preventative maintenance as well as repair to deteriorated elements to maintain its usability and appeal for future generations. We have noted several areas that are in need of immediate attention such as the chimneys, the corbelling below the eave on all elevations including a portion on the west elevation (which is in danger of falling), and the coping stones at the gables and at the side stair walls on the east elevation.

The roofing, flashing and gutters were found to be generally in need of replacement.

The building was not examined for the presence of asbestos, for which, an evaluation should be conducted by a qualified company prior to the undertaking of any repair work.

General Description

A visual survey was performed on October 29th and 30th, 2009 for the purpose of examining the building envelope of both the main building and the annex. The buildings were observed from the ground as well as from an aerial lift. Time and access constraints limited the aerial lift

observation to a portion of the south and west elevations of the main building, and to the north elevation of the annex. This survey provided the necessary information regarding the condition of the exterior masonry to compile the following recommendations which have been itemized with respect to the level of urgency recommended for remediation.

For the purpose of this report, the front façade of Hillside Place faces east, with the annex building being situated on the west side of the main building as shown on "SK-A", attached.

The three story main building, including its prominent tower feature, was constructed in 1882, for use as a school. In ca. 1891, the annex was built to the west of the original structure, and is attached by two enclosed walkways. The annex is a three story building with a small two story addition on the south side. Between 1989 and 1990, the buildings were converted into condominiums, which involved the partitioning of levels within the main building to create a fourth and fifth floor.

The building envelopes are composed of brick masonry walls with limestone window sills and lintels above grade sitting atop brownstone foundation walls. Notable architectural masonry features include decorative black and white brick bands on both buildings and a checkerboard pattern near the top of the main building's walls. Brick corbelling is present where the upper portion of the wall meets the eave. Ten brick chimneys top the mansard roof of the main building, one of which has been partially disassembled. There is an additional chimney located on the south side of the tower roof as well. Wood framed dormers are present on the west and north elevations, as well as a wooden copula near the center of the roof. The annex has a hipped roof, atop of which are four brick chimneys. Skylights have been installed in both buildings.

Noted Building Conditions and Repair Recommendations

The following conditions were noted during the previously mentioned observation, and are accompanied by *recommendations* and a degree of urgency for remediation of each issue. Please refer to drawings SK-B to SK-I for location and the extent of adverse conditions. The repair references indicated below and on the attached drawings have been separated by urgency level, followed by the repair item:

Degrees of Urgency:

Level 1 - Immediate threat to public safety and/or stability of the structure.
Level 2 - Eventual threat to structural stability and/or public safety and will result in a "Level 1" condition if not corrected. (Repair in 2 to 5 years)
Level 3 - Will worsen to "Level 2" or cause other problems if not corrected. (Repair in 5 to 10 years)

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 # Item Description and *Recommendation*

1-A **Loose and Shifted Masonry.** There are areas on all of the elevations where
2-A the *brick* and stone masonry is loose and/or has shifted from its original
3-A position due to mortar deterioration An urgency level of 1 is indicated where the masonry units are unstable and are in danger of falling.

The corbelled eave of both the main and annex buildings is where we found loose and shifted masonry most abundantly. It is likely that this deterioration is a result of the failure of the gutter system over a long period of time which has allowed water to infiltrate the corbelling from above that has in turn, caused mortar deterioration thus loosening of bricks.

In addition, we found significantly loose masonry at the two doors on the east elevation with side stone walls as well as at a number of the chimneys.

All areas of masonry which are loose should be dismantled to the point of sound material and re-set with salvaged masonry units and compatible mortar. It is probable that this will include the outer 2 wythes of brick where deterioration is significant. At protruding features, such as chimneys, consideration may be given to permanent disassembly without reconstruction.

1-B **Loose and Shifted Coping Stones.** On the east elevation the limestone coping stones topping the gable ends have shifted out of plane. This movement can most likely be attributed to water infiltration through the coping stones which has deteriorated the mortar setting bed allowing the units to shift.

The coping stones at the ends should be removed and re-set. Any loose brick masonry below the coping stones should be tightened up, then stainless steel pins should be installed to anchor the coping stones from future movement. Through-wall flashing should be installed beneath the coping stones and tied into the new roofing system.

1-C **Eroded Mortar Joints.** The setting mortar between the masonry units
2-C throughout areas of the entire building façade are in varying states of erosion.
3-C Slow deterioration of mortar is a normal process of masonry aging, and requires occasional cutting and pointing campaigns to maintain the longevity of the structure. It is important to specify the appropriate cutting depth and mortar recipe in order for the pointing to have long term durability.

The original exposed mortar appears to have been black in color; however, it has faded to a lighter color over the years due to sun-bleaching. We were able to see some of the unbleached dark mortar beneath a thin pointing coat (called a "scrub coating") where deteriorated. The black mortar makes the joints appear to be "empty" when viewed from afar. The scrub coating itself has also caused damage to the underlying mortar by trapping moisture within

the wall.

The mortar joints should be cut to an appropriate depth and pointed with a compatible mortar. All scrub coating should be removed as part of the cutting process. We have prioritized the cutting and pointing work by urgency level based on the degree of deterioration and relative porosity of the mortar. We *also noted the percentage of joints in an area that need attention; however, all mortar joints should eventually be cut and pointed.*

1-D **Deeply Eroded Mortar Joints.** Similar to Item C above, we identified some
2-D areas that are deeply eroded, most commonly between the windows and the
3-D lintels.

Refer to Item C for treatment recommendations.

1-E **Eroded Mortar Joints and Loose Masonry.** Portions of the elevations
2-E contain mortar joints which have eroded to the extent of causing masonry elements to loosen and bricks to spall.

Refer to Item A for loose masonry and Item C for eroded joints treatment recommendations. We have indicated *two percentages on the drawings for these items, the first value represents the area of the masonry with eroded mortar joints, and the second value is representative of the percentage of masonry which is loose or spalled.*

1-F **Cracking through Stone Unit.** A few of the stone lintels have cracked,
2-F splitting the unit in two pieces.

The cracked stones should be pinned and/or replaced depending on condition.

1-G **Deteriorated and Spalled Stone Surface.** Limestone has a natural bedding
2-G plane which is created as sedimentary layers were added to the stone over
3-G time; it is most advantageous to install stones so that this plane is oriented horizontally. The window lintels in this case were installed on edge (face bedded), which has made them vulnerable to moisture penetrating the bedding planes and weakening the bond between the planes. The face bedding of the lintel stones has resulted in spalls and a concave wearing of the surface.

The deteriorated stones should be patched or honed, which would remove the outer layer of the stone to create a flat surface. Consideration may be given to replacing the most deteriorated units.

1-H **Vertical Crack through Masonry.** There are cracks which run through the
2-H brick units and the mortar joints located on the elevations, the most evident of which are located at the joint between the lintel stones and extending into the brick masonry at the tower. The most likely cause is the expansion of the corbels due to moisture infiltration propagated by freeze-thaw cycles which has founded the structural crack, which in time, continued through the brick

masonry elements.

The crack should be stitch repaired which involves removing the bricks and "chasing" the crack if it continues into the thickness of the wall. All cracked bricks should be replaced and the area rebuilt.

1-I **Deteriorated Stones from Water Vapor.** Water vapor is created at the
2-I windows because of the difference in exterior and interior temperatures which collects on the surrounding masonry as well as the window pane. Over time, the moisture has worked its way into the stone masonry of the main building ground floor windows causing the stones to delaminate and spall.

The damaged stones should be patched or replaced. To keep this from becoming a recurring issue, the windows should be replaced and/or relocated within the depth of the window opening, refer to the attached report by Smith Edwards Architects for further information.

2-J **Rusted Anchor Embedded in Masonry.** There are a few locations where metal anchors, mostly from previously dismantled fire escapes, have been embedded in the masonry walls and have rusted.

The metal should be removed and masonry patched before the rust begins to expand, pushing on the surrounding masonry causing it to crack.

2-K **Monitor and Investigate Area.** There are a few areas which need further monitoring and investigation. At the southeast corner of the main building there are two areas where the walls are bulged outward at the levels below and above the first floor windows. On the north elevation of the main entrance porch, there is an area of brick masonry which has been coated with mortar. It is possible that this is the source of water infiltration into the living space below the porch.

Both the owner and property manager should actively monitor the affected areas for additional water infiltration. The source of these bulges at the southeast corner should be investigated to determine if the movement has stabilized. The mortar coated area on the porch entrance should be monitored and if found to be the source of water infiltration, rebuilt at an earlier phase of the repair than noted on the attached drawings.

- **Roofs, Flashing and Gutters**. Please refer to the attached report by Smith Edwards Architects for information concerning the existing roof and flashing conditions.

Attachments

Appendix A – Masonry Cost Estimate

Appendix B - Reference drawings:

SK-A – Building Key Plan
SK-B – North Elevation – Main Building
SK-C – East Elevation – Main Building
SK-D – South Elevation – Main Building
SK-E – West Elevation – Main Building
SK-F – North Elevation – Annex
SK-G – East Elevation – Annex
SK-H – South Elevation – Annex
SK-I – West Elevation – Annex

Appendix C - Report by Smith Edwards Architects

Masonry Budgetary Estimate

Summary

Total Budgetary Estimate by Urgency Level

Area	Budgetary Estimate
Priority Level 1 - Subtotal	*$380,200 to $727,000*
Priority Level 2 - Subtotal	*$449,600 to $760,500*
Priority Level 3 - Subtotal	*$619,100 to $1,032,100*
Total	*$1,448,900 to $2,519,600*

Total Budgetary Estimate by Elevation

Area	Budgetary Estimate
Main Building - North Elevation - Subtotal	*$195,500 to $325,800*
Main Building - East Elevation - Subtotal	*$443,900 to $744,400*
Main Building - South Elevation - Subtotal	*$78,200 to $137,500*
Main Building - West Elevation - Subtotal	*$185,600 to $357,500*
Main Building - Central Chimneys- Subtotal	*$26,700 to $89,500*
Annex Building - All Elevations- Subtotal	*$519,000 to $864,900*
Total	*$1,448,900 to $2,519,600*

Urgency Level 1

Main Building - North Elevation

Item #	Recommended Repair Description	Budgetary Estimate
1-A	Rebuild loose and shifted masonry.	$15,200 to $25,400
1-F	Pin repair or replace cracked stones.	$500 to $900
1-H	Stitch repair vertical cracks in masonry.	$400 to $700
1-I	Repair deteriorated window stones and resolve window issues. (See attached report by Smith Edwards Architects.)	TBD
North Elevation Urgency 1 - Subtotal		*$16,100 to $27,000*

Main Building - East Elevation

Item #	Recommended Repair Description	Budgetary Estimate
1-A	Rebuild loose and shifted masonry.	$82,600 to $137,700
1-B	Re-set coping stones and install thru-wall flashing.	$22,000 to $36,600
1-C	Cut and point eroded mortar joints.	$3,000 to $5,000
1-D	Cut and point deeply eroded mortar joints.	$400 to $600
1-E	Cut and point eroded mortar joints and re-set loose and damaged masonry.	$3,100 to $5,100
1-F	Pin repair or replace cracked stones.	$2,300 to $3,800
1-G	Hone or patch deteriorated and spalled stone surfaces.	$700 to $1,100
1-H	Stitch repair vertical cracks in masonry.	$5,900 to $9,800
1-I	Repair deteriorated window stones and resolve window issues. (See attached report by Smith Edwards Architects.)	TBD
East Elevation Urgency 1 - Subtotal		*$120,000 to $199,700*

Main Building - South Elevation

Item #	Recommended Repair Description	Budgetary Estimate
1-A	Rebuild loose and shifted masonry.	$16,400 to $27,300
1-D	Cut and point deeply eroded mortar joints.	$12,200 to $20,400
1-H	Stitch repair vertical cracks in masonry.	$600 to $1,000
1-I	Repair deteriorated window stones and resolve window issues. (See attached report by Smith Edwards Architects.)	TBD
South Elevation Urgency 1 - Subtotal		*$29,200 to $48,700*

Main Building - West Elevation

Item #	Recommended Repair Description	Budgetary Estimate
1-A	Rebuild loose and shifted masonry.	$43,700 to $72,800
1-D	Cut and point deeply eroded mortar joints.	$11,000 to $18,300
1-F	Pin repair or replace cracked stones.	$4,500 to $7,500
1-I	Repair deteriorated window stones and resolve window issues. (See attached report by Smith Edwards Architects.)	TBD
West Chimney 1	Dismantle chimney (Low Range of Estimate). or Rebuild chimney (High Range of Estimate).	$5,900 to $23,400
West Chimney 2	Dismantle chimney (Low Range of Estimate). or Rebuild chimney (High Range of Estimate).	$6,200 to $23,400

West Chimney 3	Paritially dismantle chimney and cut and point eroded mortar joints and re-set loose and damaged masonry remaning area (Low Range of Cost Estimate) or Cut and point full chimney (High Range of Cost Estimate).	$32,800 to $76,500
West Elevation Urgency 1 - Subtotal		*$104,100 to $221,900*

Annex Building - All Elevations

Item #	Recommended Repair Description	Budgetary Estimate
1-A	Rebuild loose and shifted masonry.	$84,100 to $140,200
Annex Urgency 1 - Subtotal		*$84,100 to $140,200*

Main Building - Central Chimneys

Item #	Recommended Repair Description	Budgetary Estimate
Central Chimney 1	Dismantle chimney (Low Range of Cost Estimate). or Cut and point eroded mortar joints (High Range of Cost Estimate)	$8,900 to $26,600
Central Chimney 2	Dismantle chimney (Low Range of Cost Estimate). or Rebuild chimney (High Range of Cost Estimate).	$8,900 to $35,400
Central Chimney 2	Dismantle chimney (Low Range of Cost Estimate) or Cut and point eroded mortar joints and re-set loose and damaged	$8,900 to $27,500
Central Chimneys- Subtotal		*$26,700 to $89,500*

Urgency Level 2

Main Building - North Elevation

Item #	Recommended Repair Description	Budgetary Estimate
2-A	Rebuild loose and shifted masonry.	$3,500 to $5,800
2-C	Cut and point eroded mortar joints.	$18,200 to $30,300
2-D	Cut and point deeply eroded mortar joints.	$9,200 to $15,300

2-E	Cut and point eroded mortar joints and re-set loose and damaged masonry.	$1,400 to $2,300
2-G	Hone or patch deteriorated and spalled stone surfaces.	$300 to $600
2-H	Stitch repair vertical cracks in masonry.	$2,400 to $3,900
2-I	Repair deteriorated window stones and resolve window issues. (See attached report by Smith Edwards Architects.)	TBD
2-J	Remove rusted anchors embedded in masonry.	$100 to $200
North Elevation Urgency 2- Subtotal		*$37,500 to $62,300*

Main Building - East Elevation

Item #	Recommended Repair Description	Budgetary Estimate
2-A	Rebuild loose and shifted masonry.	$15,300 to $25,500
2-C	Cut and point eroded mortar joints.	$43,600 to $72,700
2-E	Cut and point eroded mortar joints and re-set loose and damaged masonry.	$25,800 to $43,100
2-F	Pin repair or replace cracked stones.	$1,100 to $1,900
2-H	Stitch repair vertical cracks in masonry.	$6,900 to $11,500
2-I	Repair deteriorated window stones and resolve window issues. (See attached report by Smith Edwards Architects.)	TBD
2-J	Remove rusted anchors embedded in masonry.	$100 to $200
2-K	Monitor and investigate the designated areas.	$2,300 to $3,800

East Chimney 2	Cut and point eroded mortar joints (Low Range of Estimate). Dismantle chimney (High Range of Estimate).	or	$3,800 to $11,000
East Elevation Urgency 2- Subtotal			*$98,900 to $169,700*

Main Building - South Elevation

Item #	Recommended Repair Description		Budgetary Estimate
2-A	Rebuild loose and shifted masonry.		$7,400 to $12,400
2-C	Cut and point eroded mortar joints.		$1,500 to $2,600
2-D	Cut and point deeply eroded mortar joints.		$6,300 to $10,400
2-G	Hone or patch deteriorated and spalled stone surfaces.		$1,000 to $1,700
2-H	Stitch repair vertical cracks in masonry.		$1,400 to $2,300
South Chimney 1	Cut and point eroded mortar joints (Low Range of Estimate) Dismantle chimney (High Range of Estimate).	or	$4,500 to $8,300
South Chimney 2	Cut and point eroded mortar joints (Low Range of Estimate) Dismantle chimney (High Range of Estimate).	or	$1,400 to $8,300
South Elevation Urgency 2- Subtotal			*$23,500 to $46,000*

Main Building - West Elevation

Item #	Recommended Repair Description	Budgetary Estimate
2-A	Rebuild loose and shifted masonry.	$6,800 to $11,300
2-C	Cut and point eroded mortar joints.	$7,100 to $11,800
2-D	Cut and point deeply eroded mortar joints.	$5,100 to $8,400

2-E	Cut and point eroded mortar joints and re-set loose and damaged masonry.	$2,000 to $3,300
2-F	Pin repair or replace cracked stones.	$1,700 to $2,800
2-G	Hone or patch deteriorated and spalled stone surfaces.	$200 to $300
West Elevation Urgency 2- Subtotal		*$22,900 to $37,900*

Annex Building - All Elevations

Item #	Recommended Repair Description	Budgetary Estimate
2-A	Rebuild loose and shifted masonry.	$63,600 to $106,000
2-C	Cut and point eroded mortar joints.	$194,800 to $324,700
2-D	Cut and point deeply eroded mortar joints.	$2,700 to $4,500
2-E	Cut and point eroded mortar joints and re-set loose and damaged masonry.	$5,700 to $9,400
Annex Urgency 2- Subtotal		*$266,800 to $444,600*

Main Building - North Elevation

Item #	Recommended Repair Description	Budgetary Estimate
3-A	Rebuild loose and shifted masonry.	$3,500 to $5,800
3-C	Cut and point eroded mortar joints.	$138,400 to $230,700
North Elevation Urgency 3- Subtotal		*$141,900 to $236,500*

Main Building - East Elevation

Item #	Recommended Repair Description	Budgetary Estimate
3-A	Rebuild loose and shifted masonry.	$20,000 to $33,400
3-C	Cut and point eroded mortar joints.	$204,800 to $341,300
3-G	Hone or patch deteriorated and spalled stone surfaces.	$200 to $300
East Elevation Urgency 3- Subtotal		*$225,000 to $375,000*

Main Building - South Elevation

Item #	Recommended Repair Description	Budgetary Estimate
3-C	Cut and point eroded mortar joints.	$16,800 to $28,100
3-D	Cut and point deeply eroded mortar joints.	$8,400 to $14,100
3-G	Hone or patch deteriorated and spalled stone surfaces.	$300 to $600
South Elevation Urgency 3- Subtotal		*$25,500 to $42,800*

Main Building - West Elevation

Item #	Recommended Repair Description	Budgetary Estimate
3-C	Cut and point eroded mortar joints.	$58,600 to $97,700
West Elevation Urgency 3- Subtotal		*$58,600 to $97,700*

Annex Building - All Elevations

Item #	Recommended Repair Description	Budgetary Estimate
3-C	Cut and point eroded mortar joints.	$167,200 to $278,700
3-G	Hone or patch deteriorated and spalled stone surfaces.	$900 to $1,400
Annex Urgency 3- Subtotal		*$168,100 to $280,100*

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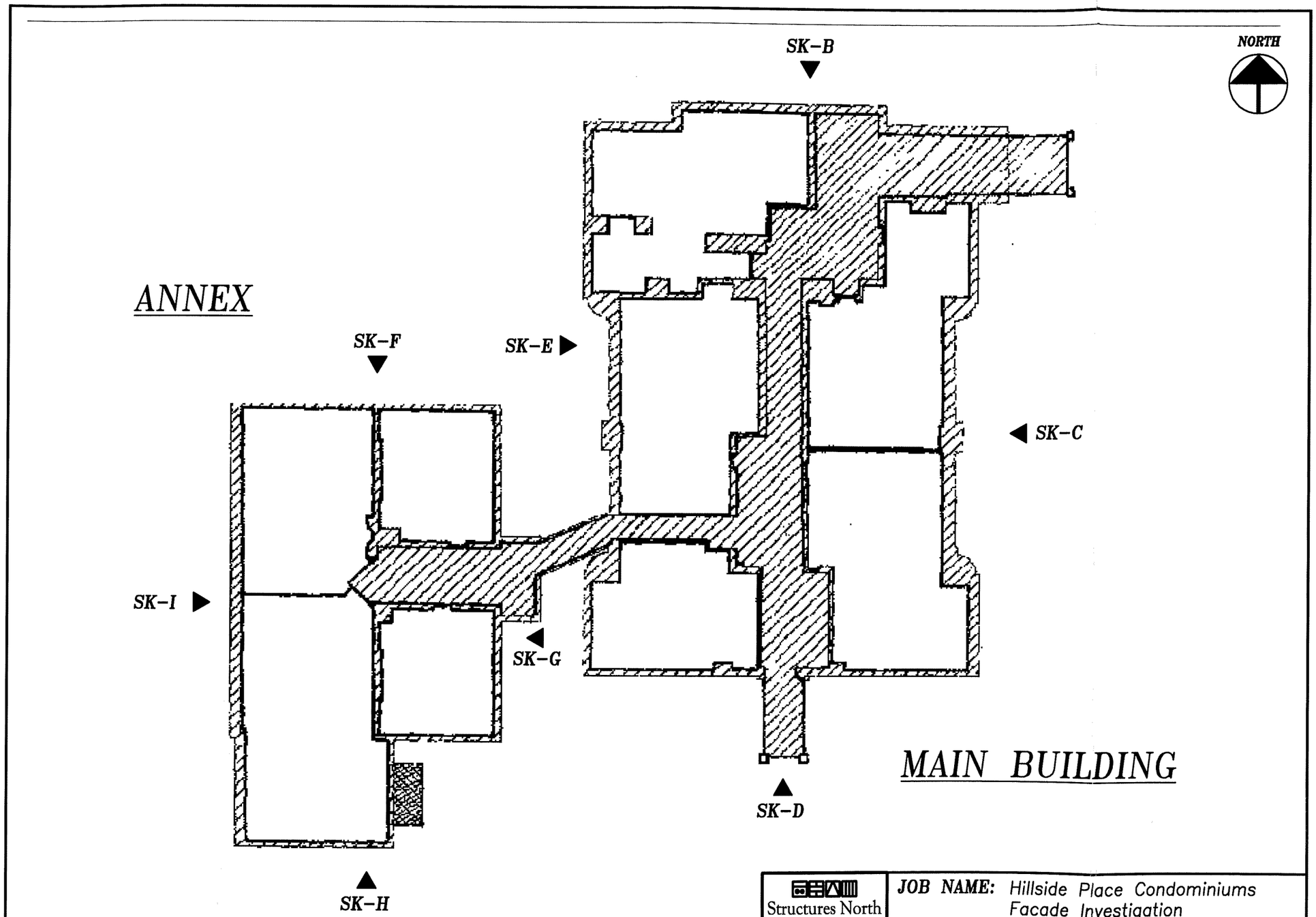

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	DRAWN BY: PN	**CHECKED BY:** BA
	SCALE: No Scale	**DATE:** 12-30-09
	Building Key Plan	**SK-A**

LEGEND

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Level 2 = Possible or eventual threat to public safety and/or stability of the structure (Level 1) if not corrected soon (Repair in 2 to 5 years).
Level 3 = Will worsen to Level 2 or cause other problems if not corrected (Repair in 5 to 10 years).

URGENCY LEVEL 1

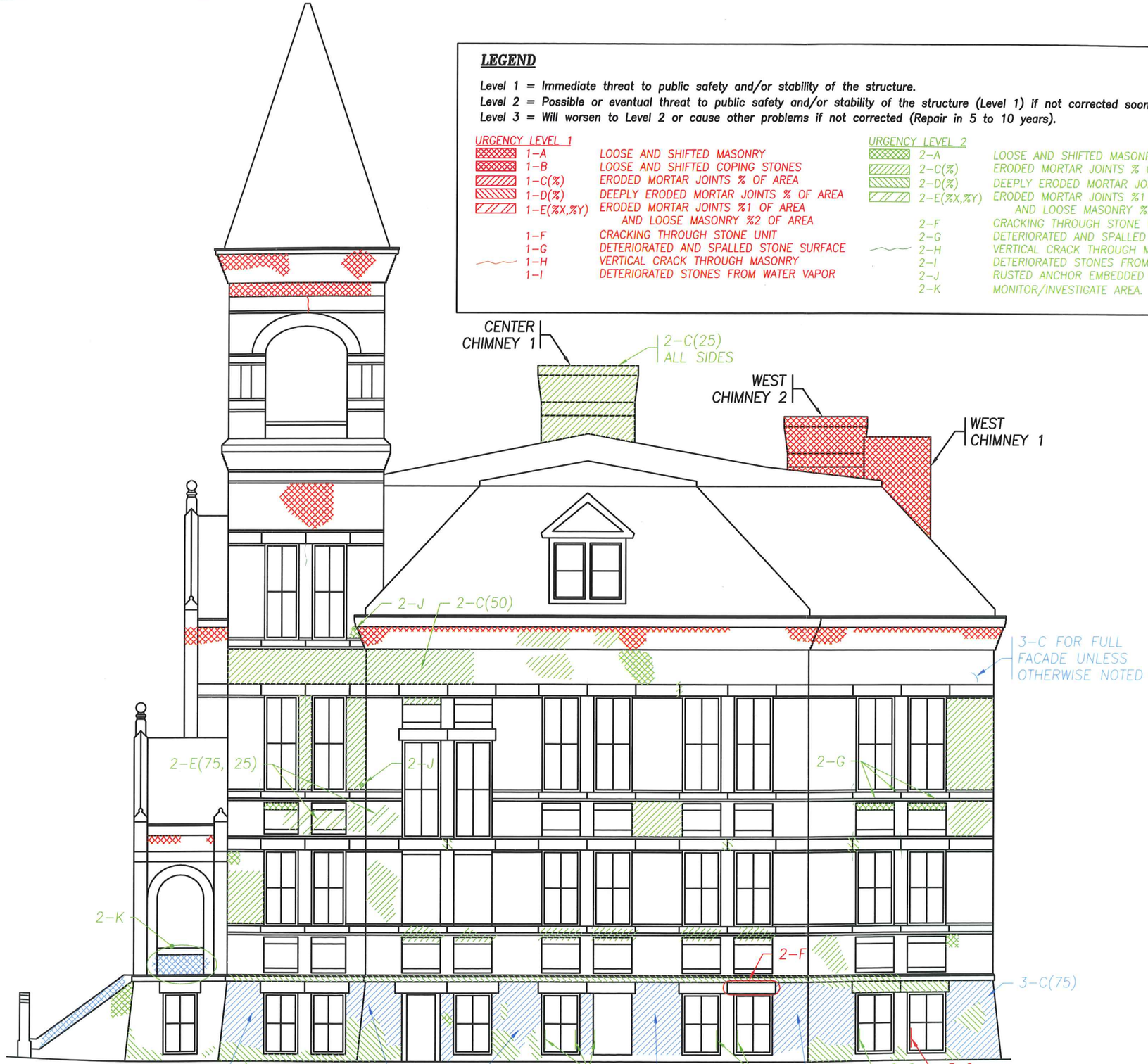
1–A	LOOSE AND SHIFTED MASONRY
1–B	LOOSE AND SHIFTED COPING STONES
1–C(%)	ERODED MORTAR JOINTS % OF AREA
1–D(%)	DEEPLY ERODED MORTAR JOINTS % OF AREA
1–E(%X,%Y)	ERODED MORTAR JOINTS %1 OF AREA AND LOOSE MASONRY %2 OF AREA
1–F	CRACKING THROUGH STONE UNIT
1–G	DETERIORATED AND SPALLED STONE SURFACE
1–H	VERTICAL CRACK THROUGH MASONRY
1–I	DETERIORATED STONES FROM WATER VAPOR

URGENCY LEVEL 2

2–A	LOOSE AND SHIFTED MASONRY
2–C(%)	ERODED MORTAR JOINTS % OF AREA
2–D(%)	DEEPLY ERODED MORTAR JOINTS % OF AREA
2–E(%X,%Y)	ERODED MORTAR JOINTS %1 OF AREA AND LOOSE MASONRY %2 OF AREA
2–F	CRACKING THROUGH STONE UNIT
2–G	DETERIORATED AND SPALLED STONE SURFACE
2–H	VERTICAL CRACK THROUGH MASONRY
2–I	DETERIORATED STONES FROM WATER VAPOR
2–J	RUSTED ANCHOR EMBEDDED IN MASONRY
2–K	MONITOR/INVESTIGATE AREA.

URGENCY LEVEL 3

3–A	LOOSE AND SHIFTED MASONRY
3–C(%)	ERODED MORTAR JOINTS % OF AREA
3–G	DETERIORATED AND SPALLED STONE SURFACE



NORTH ELEVATION – MAIN BUILDING
NTS

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JOB NAME: Hillside Place Condominiums Facade Investigation	
DRAWN BY: PN	**CHECKED BY:** BA
SCALE: No Scale	**DATE:** 01–25–10
North Elevation – Main Bldg	**SK–B**

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URGENCY LEVEL 1

1–A	LOOSE AND SHIFTED MASONRY
1–B	LOOSE AND SHIFTED COPING STONES
1–C(%)	ERODED MORTAR JOINTS % OF AREA
1–D(%)	DEEPLY ERODED MORTAR JOINTS % OF AREA
1–E(%X,%Y)	ERODED MORTAR JOINTS %1 OF AREA AND LOOSE MASONRY %2 OF AREA
1–F	CRACKING THROUGH STONE UNIT
1–G	DETERIORATED AND SPALLED STONE SURFACE
1–H	VERTICAL CRACK THROUGH MASONRY
1–I	DETERIORATED STONES FROM WATER VAPOR

URGENCY LEVEL 2

2–A	LOOSE AND SHIFTED MASONRY
2–C(%)	ERODED MORTAR JOINTS % OF AREA
2–D(%)	DEEPLY ERODED MORTAR JOINTS % OF AREA
2–E(%X,%Y)	ERODED MORTAR JOINTS %1 OF AREA AND LOOSE MASONRY %2 OF AREA
2–F	CRACKING THROUGH STONE UNIT
2–G	DETERIORATED AND SPALLED STONE SURFACE
2–H	VERTICAL CRACK THROUGH MASONRY
2–I	DETERIORATED STONES FROM WATER VAPOR
2–J	RUSTED ANCHOR EMBEDDED IN MASONRY
2–K	MONITOR/INVESTIGATE AREA.

URGENCY LEVEL 3

3–A	LOOSE AND SHIFTED MASONRY
3–C(%)	ERODED MORTAR JOINTS % OF AREA
3–G	DETERIORATED AND SPALLED STONE SURFACE

EAST ELEVATION – MAIN BUILDING
NTS

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JOB NAME: Hillside Place Condominiums Facade Investigation	
DRAWN BY: PN	**CHECKED BY:** BA
SCALE: No Scale	**DATE:** 01–25–10
East Elevation – Main Bldg	**SK–C**

LEGEND

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URGENCY LEVEL 1

1-A	LOOSE AND SHIFTED MASONRY
1-B	LOOSE AND SHIFTED COPING STONES
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1-E(%X,%Y)	ERODED MORTAR JOINTS %1 OF AREA AND LOOSE MASONRY %2 OF AREA
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URGENCY LEVEL 2

2-A	LOOSE AND SHIFTED MASONRY
2-C(%)	ERODED MORTAR JOINTS % OF AREA
2-D(%)	DEEPLY ERODED MORTAR JOINTS % OF AREA
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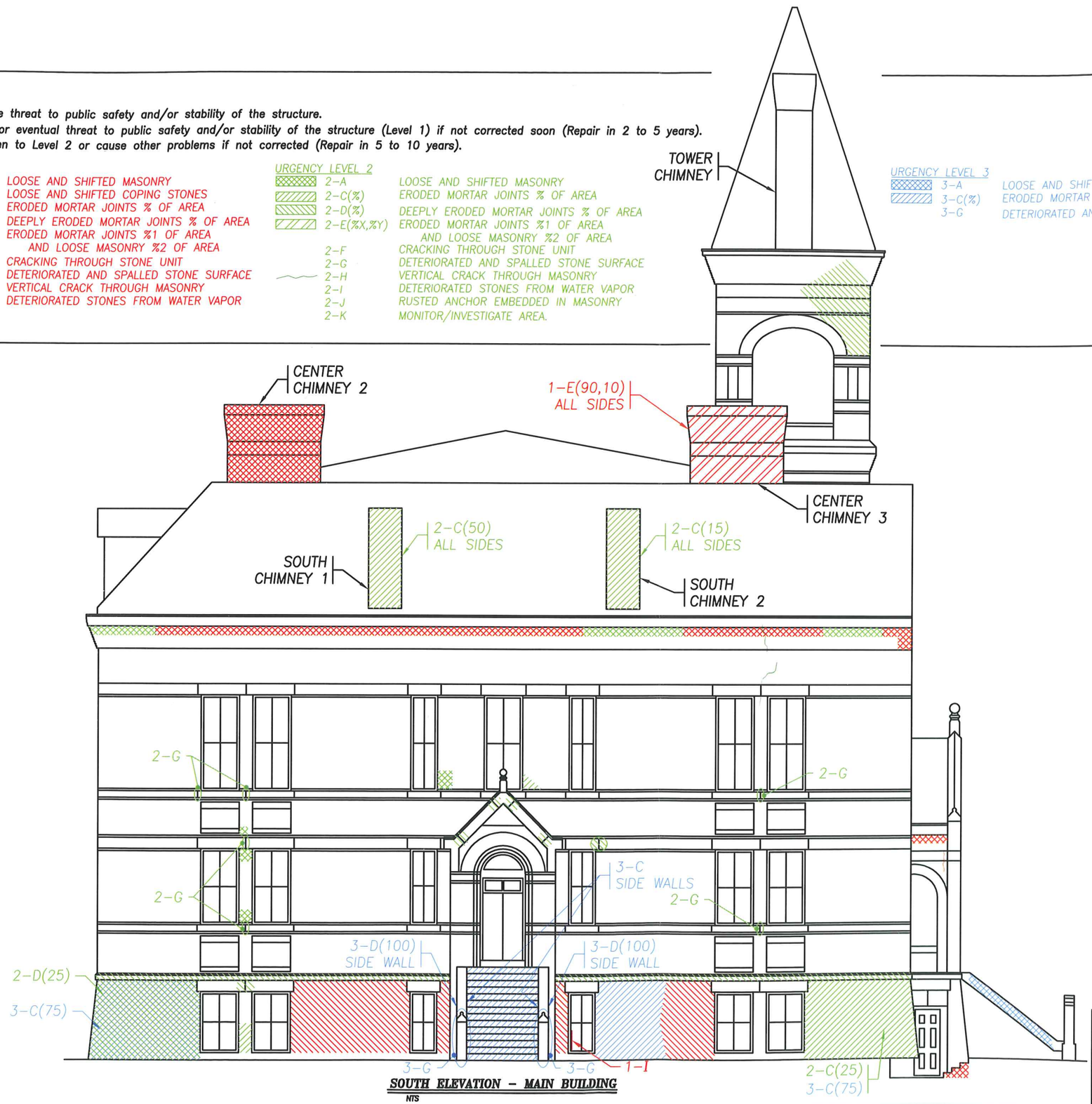
URGENCY LEVEL 3

3-A	LOOSE AND SHIFTED MASONRY
3-C(%)	ERODED MORTAR JOINTS % OF AREA
3-G	DETERIORATED AND SPALLED STONE SURFACE



SOUTH ELEVATION - MAIN BUILDING
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JOB NAME: Hillside Place Condominiums Facade Investigation	
DRAWN BY: PN	**CHECKED BY:** BA
SCALE: No Scale	**DATE:** 01-25-10
South Elevation - Main Bldg	**SK-D**

LEGEND

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	1-B	LOOSE AND SHIFTED COPING STONES
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	1-I	DETERIORATED STONES FROM WATER VAPOR

URGENCY LEVEL 2

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	2-H	VERTICAL CRACK THROUGH MASONRY
	2-I	DETERIORATED STONES FROM WATER VAPOR
	2-J	RUSTED ANCHOR EMBEDDED IN MASONRY
	2-K	MONITOR/INVESTIGATE AREA.

URGENCY LEVEL 3

	3-A	LOOSE AND SHIFTED MASONRY
	3-C(%)	ERODED MORTAR JOINTS % OF AREA
	3-G	DETERIORATED AND SPALLED STONE SURFACE

TOWER CHIMNEY
2-J
CENTER CHIMNEY 1
2-C (25) ALL SIDES
CENTER CHIMNEY 2
1-E(70,30) ALL SIDES
2-E(70,30)
WEST CHIMNEY 2
WEST CHIMNEY 1
AREA IN DANGER OF FALLING
WEST CHIMNEY 3
3-C(25) FOR FULL FACADE UNLESS OTHERWISE NOTED
2-F
1-F
2-G
1-D(25)
2-C(75)
1-I
3-G
2-C(50)
1-D(50)
1-A OPENING
2-I
2-D(20)

WEST ELEVATION - MAIN BUILDING
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JOB NAME: Hillside Place Condominiums Facade Investigation
DRAWN BY: PN | **CHECKED BY:**
SCALE: No Scale | **DATE:** 01-25-
West Elevation -Main Bldg | **SI**

LEGEND

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URGENCY LEVEL 2

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2–K	MONITOR/INVESTIGATE AREA.

URGENCY LEVEL 3

3–A	LOOSE AND SHIFTED MASONRY
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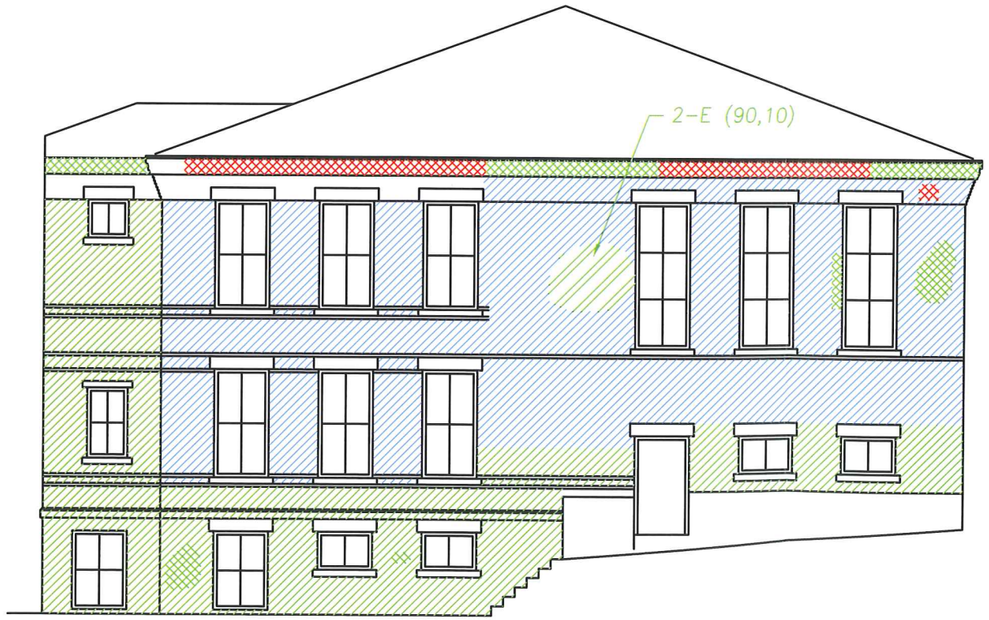

NORTH ELEVATION – ANNEX
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JOB NAME: Hillside Place Condominiums
Facade Investigation

DRAWN BY: PN/SB | **CHECKED BY:** BA

SCALE: No Scale | **DATE:** 01–25–10

North Elevation – Annex | **SK–**

LEGEND

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URGENCY LEVEL 2

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URGENCY LEVEL 3

3–A	LOOSE AND SHIFTED MASONRY
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3–G	DETERIORATED AND SPALLED STONE SURFACE

EAST ELEVATION – ANNEX
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JOB NAME: Hillside Place Condominiums
Facade Investigation

DRAWN BY: PN/SB | **CHECKED BY:** E
SCALE: No Scale | **DATE:** 01–25–1
East Elevation – Annex | **SK–**

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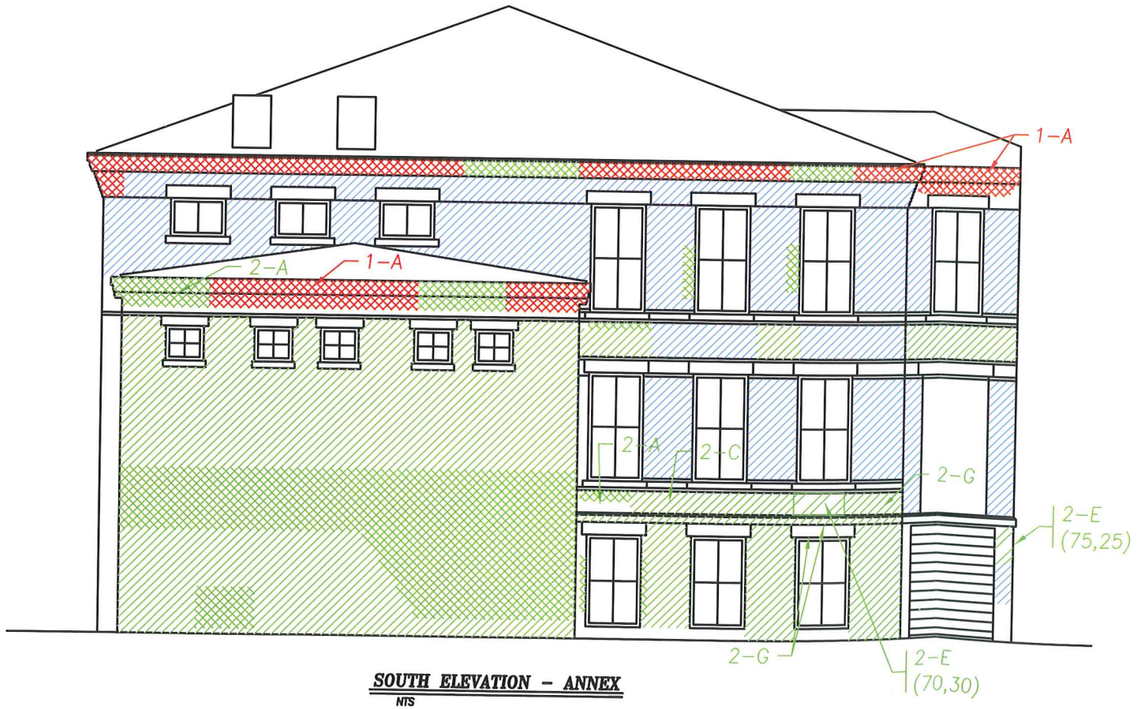

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SCALE: No Scale | **DATE:** 01–25–10

South Elevation – Annex | **SK–E**

WEST ELEVATION – ANNEX
NTS

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Facade Investigation

DRAWN BY: PN/SB | **CHECKED BY:**
SCALE: No Scale | **DATE:** 01-25-
West Elevation -Annex | **SK**

Hillside Place Condominiums-Capitol Needs Assessment

27 Hillside Place New Britain, Connecticut

January 12, 2010

Smith Edwards Architects PC along with our structural engineering consultant Structures North PC has conducted a physical assessment of the Hillside Place Condominium, a four story masonry and wood framed structure located at 27 Hillside Place, constructed in 1882. This former public school building was renovated into condominiums in 1989. The scope of the Capitol Needs Assessment was to analyze the condition of the existing roof, windows and exterior masonry envelope. This consisted of a physical assessment of these building components. The investigation and supporting documentation prepared for this project was gathered during the months of October and November, 2009. The proposed architectural and structural renovation treatments are identified in the attached report.

Masonry:

The existing building envelope is generally in good condition having been built of quality materials and sound construction practices. The exterior bearing walls are constructed of multiple wythes of brick and lime mortar with brownstone trim, base and detail pieces. The clay fired brick is sound and has weathered well. The brownstone is also sound but has exhibited some localized areas of deterioration that will require patching. The brick mortar joints are weathered and some areas require re-pointing. The brick chimneys are in poor condition and will require extensive work. The brownstone mortar joints are also sound, however several of the vertical joints have deteriorated and will need re-pointing. The foundations are of rusticated Portland brownstone, bedded as quarried and in good condition. The building's masonry envelope was evaluated in November, 2009 by Structures North Consulting Engineers of Hartford, Connecticut, and the findings incorporated into this report.

Roofing:

The roof of the main building is a combination of materials; the original slate roofing and exposed copper flashings are present on the sloping mansard and tower portions of the roof. The "flat" or low slope sections of the main roof are bituminous roll roofing installed over an existing tin roofing materials this was most likely done during the 1989 building renovation. The Annex roof is also a tin sheet roof on a wooden deck. This original roof has been covered with a weatherproof coating, most likely applied during the 1989 building renovation.

Windows:

The existing aluminum windows are insulating glass, single hung units with historically accurate muntin patterns. These windows appear to have been installed during the 1989 building renovation. These windows are generally in good condition, however they should be re-caulked to the masonry surrounds during the masonry restoration process. There are several wood windows in the gable ends of the top floor that are severely weathered and should be replaced with insulating glass windows.

Treatments:

The building renovation would consist of the replacement of the existing roof, gutters, flashings, skylights and associated appurtenances with a new asphalt shingle and membrane roofing system. The proposed roofing solutions would include removing the deteriorated slate roof system to the existing wood deck and then re-shingling with architectural grade asphalt composite shingles. The "low sloped roofs would be stripped to the tin roof and then covered with new sheathing and roofing membrane system. Several membrane options are available based on the length of the warrantee that the Board wants to obtain. New gutters, rain water leaders and overflow scuppers would be installed to carry the water to the municipal storm water system.

The ornamental slate roof and copper ridge caps should remain on the main entry tower, the slate is in good condition and this roof is not leaking. The copper ridge caps and flashings are aged and in need of selective repair with solder. The exposed copper ridge caps can be coated with a colored aspaltic paint preserving the green patina.

The existing plastic glazed skylights would be replaced with new thermally glazed skylights. The existing roof top mechanical equipment would be temporarily disconnected as required to replace the roofing and then reinstalled onto newly fabricated metal roof curbs.

The total roof area of both the main building and the annex is approximately 16,550 g.s.f.

Roof options for evaluation:

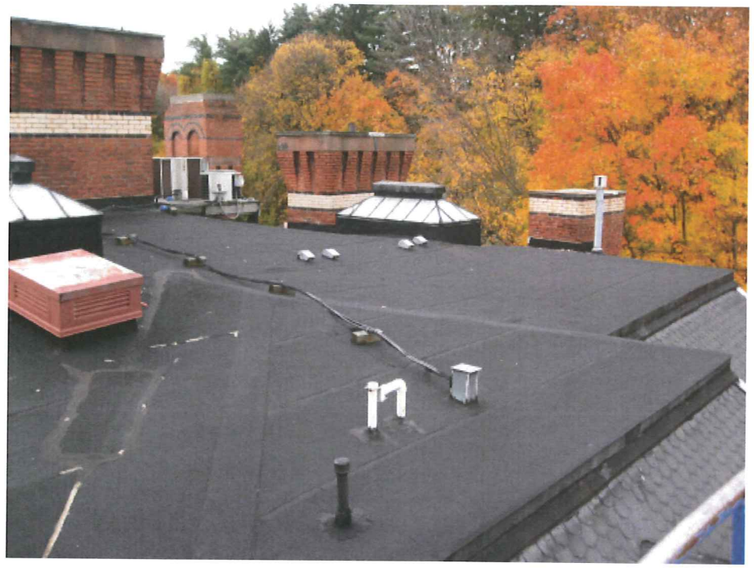
- Cover the "flat roof" areas with a rubber membrane system at approximately 12 dollars per square foot.
- Cover the "flat roof" areas with a modified bituminous membrane system at approximately 15 dollars per square foot.
- Cover the "sloped roof" areas with asphalt composite shingles at approximately 7 dollar per square foot.

Replacement roof slates and failed ridge cap flashing

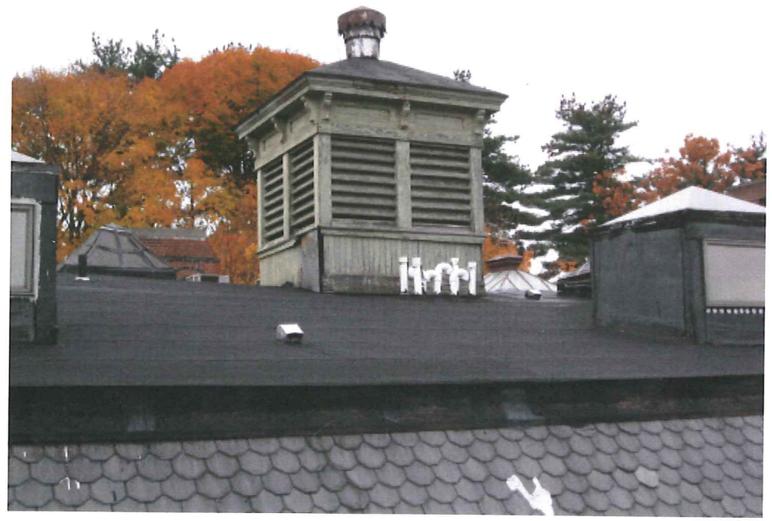
Broken and missing roof slates at chimney base with deteriorated flashing

Main roof

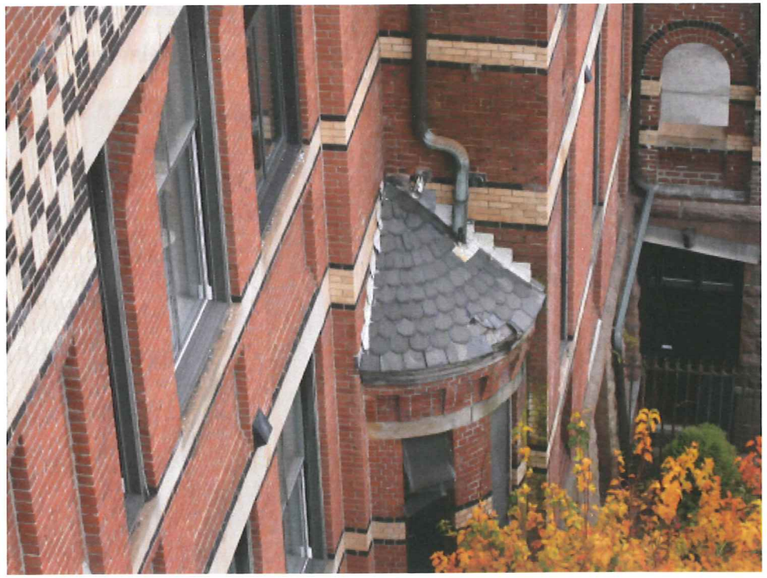
covered with bituminous roll roofing exhibiting multiple repairs and patches.



Deteriorated wooden roof monitors



Deteriorated Wood dormer and window surround



Missing and broken roof slates on low roof with failed flashings

Broken and missing roof slates, failed flashing on chimney base

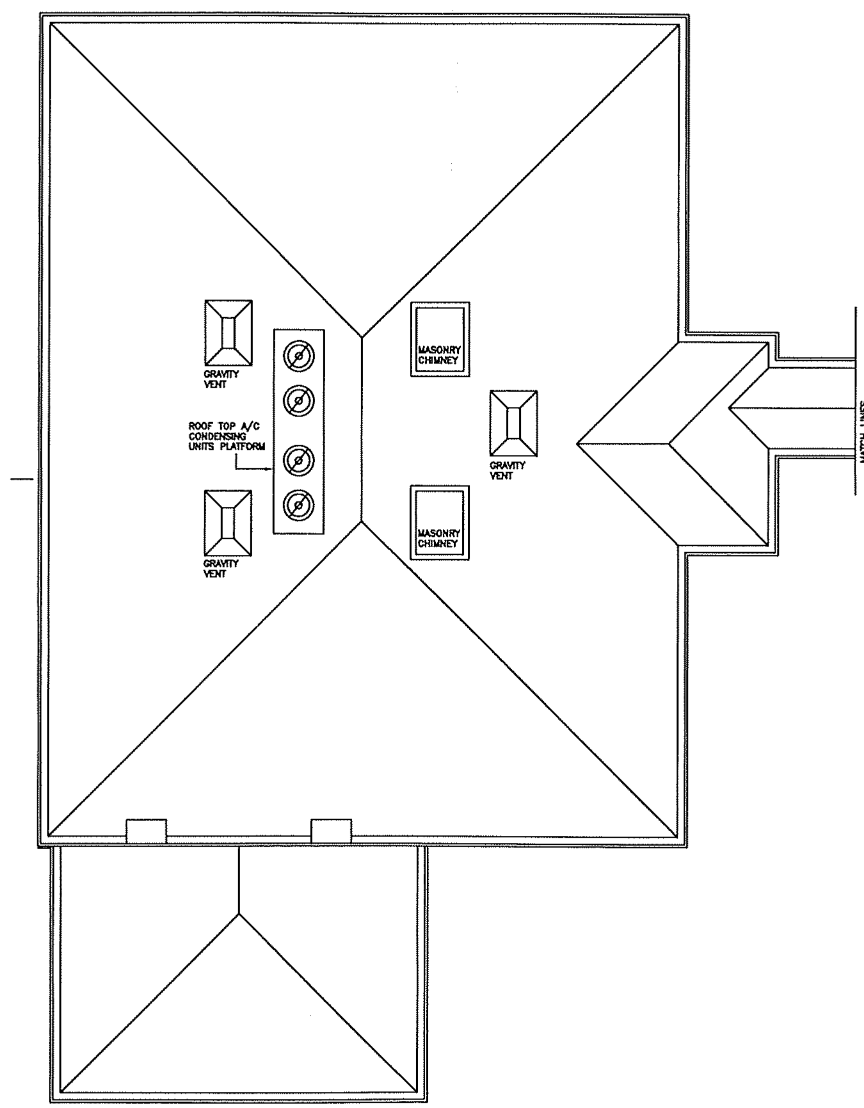
Broken roof slates and failed flashings on entry roof

Annex roof with asphaltic coating over original tin roofing, multiple failures at seams and penetrations

Deteriorated copper flashing and gutter lining, seam failure with material decomposition

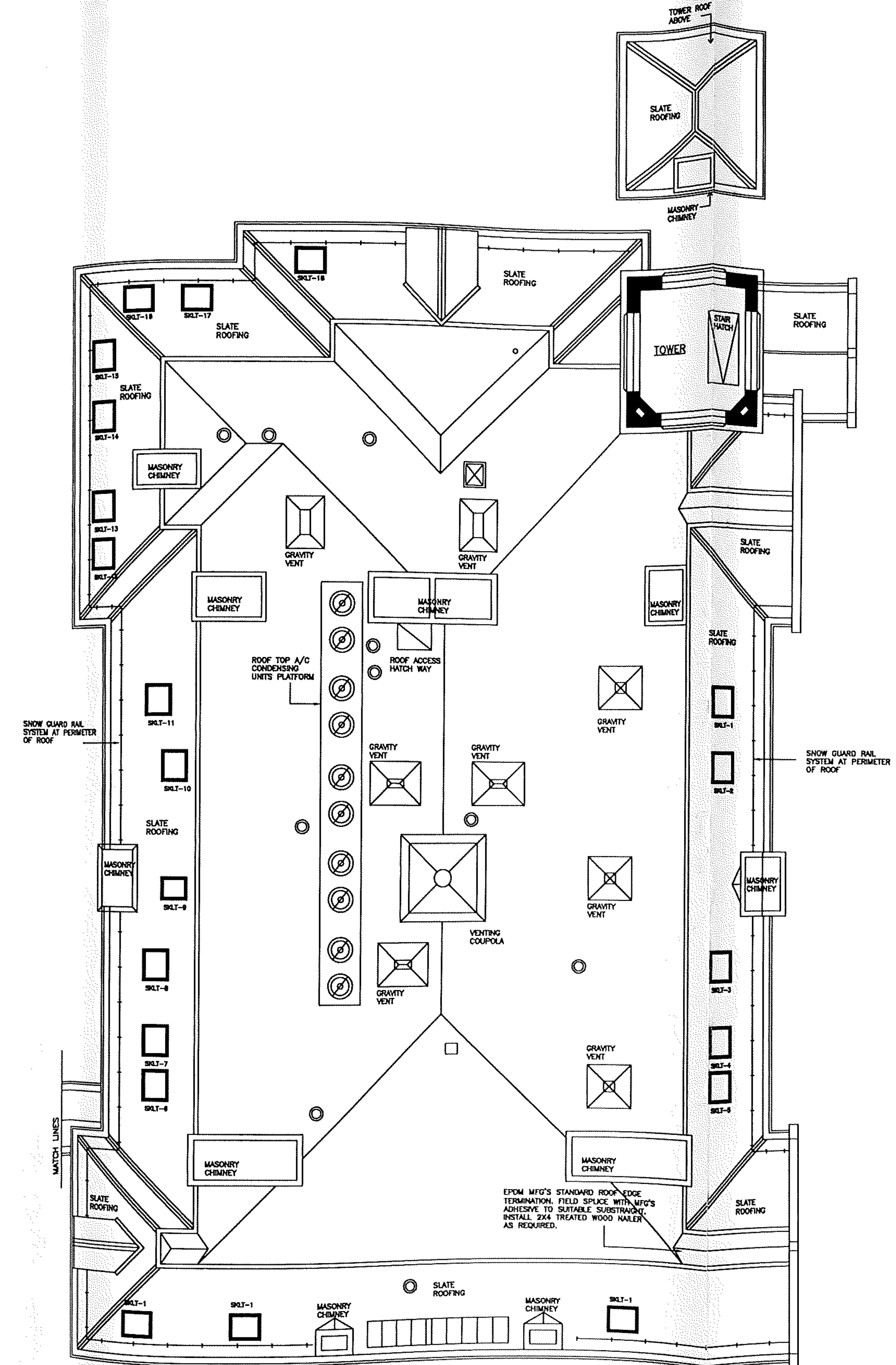
Saturated Brownstone window surround, material failure with moisture penetration into apartment

Structural Engineer examining deteriorated masonry inside the gravity ventilation shaft way enclosure



ANNEX ROOF PLAN

scale: 1/8" = 1'-0"



MAIN BUILDING ROOF PLAN

scale: 1/8" = 1'-0"

SMITHEDWARDSARCHITECTS PC

On the Web at: www.smithedwards.com or Email: info@smithedwards.com

revisions

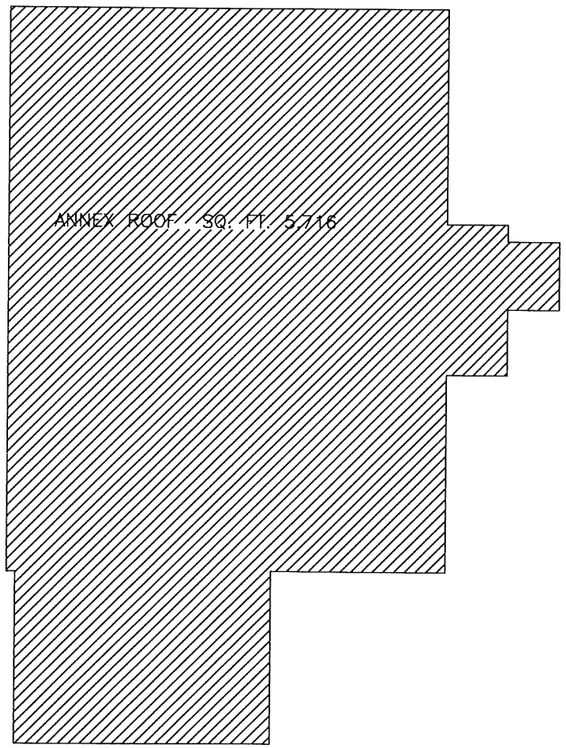
Hillside Place Condominiums

School Street
New Britain, Connecticut.

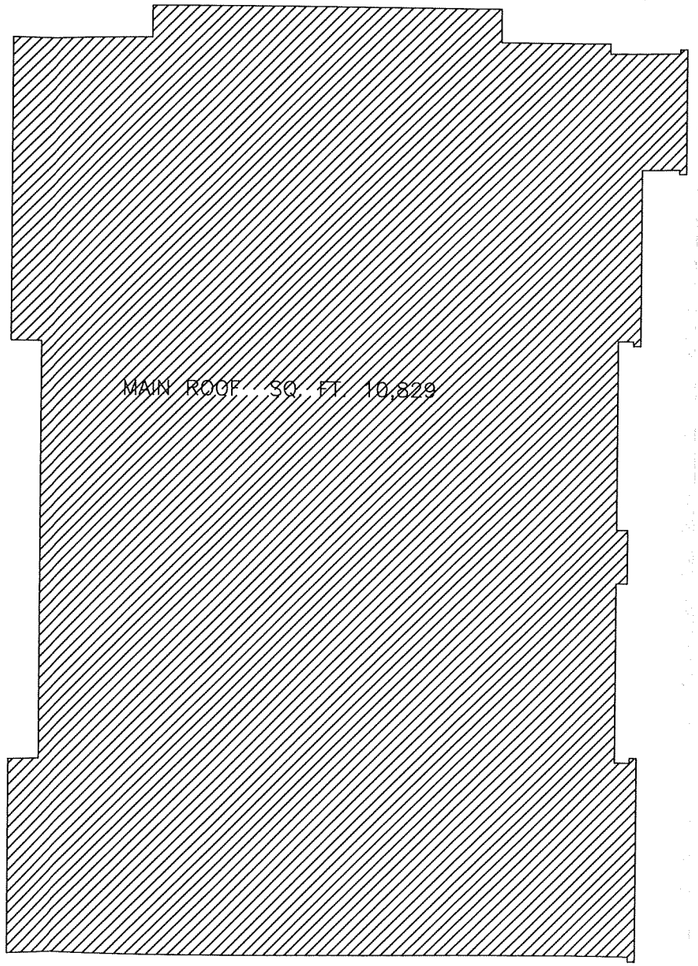
Existing Roof Plan

date: 11/27/09
print date:

E-0.1



ANNEX ROOF PLAN



MAIN BUILDING ROOF PLAN

SMITHEDWARDSARCHITECTS, llc
179 John Street, Suite 300 Hartford, CT 06103 Tel. (860)246-4200 Fax (860)246-4205
On the Web at: www.smithedwards.com or e-mail: info@smithedwards.com

revisions

Hillside Place Condominiums

School Street
New Britain, Connecticut

Roof Area Plan

date: 3/27/09
print date:

E-0.2